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| 10/550,063 | 09/21/2005 | Hiroshi Kamo | 1843.1005 | 5764 |
| 21171 7590 02/11/2008 STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005 | | | | |
| EXAMINER | | | | |
| ZIMMER, MARC S | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/550,063

Applicant(s)

KAMO ET AL.

Examiner

MARC S. ZIMMER

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8 and 13-16 is/are rejected.
- 7) ☒ Claim(s) 7 and 9-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI-108)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Claim Analysis

Applicant is reminded of the Examiner's earlier conclusion that the phrase "for printed circuit board production" was merely a recitation of intended use. Further, the "mold release" attribute is considered to be inherent in a composition that has a makeup such that there is at least 50 wt.% of polyphenylene oxide unless, of course, the reference explicitly teaches a component that would negate said property.

In this connection, there are numerous documents that teach a film comprised primarily of polyphenylene oxide. The Examiner had elected not to formulate a rejection over these because a reference teaching a similar invention, and for a similar purpose, had already been cited as a foundation for rejection. Given the straightforward manner in which Applicant would have been able to overcome this rejection, the Examiner might have considered applying one or more of these references as well. The Examiner sincerely regrets any inconvenience this may have caused Applicant.

Claim Objections

Claims 3 and 4 are objected to because Applicant's employment of the word "element" would seem to indicate that an elemental metal was being used but this is not consistent with the more particular embodiments of this component. It is submitted that Applicant should replace the word "element" with "compound".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 8, and 13-16 are rejected under 35 U.S.C. 102(a) as being anticipated by Kamo, JP 2002241601. Kamo discloses the formation of a similarly-constituted sheet possessing flame retardant properties. See paragraphs [0007], [0018], [0019], [0055]-[0058], and Table 1.

Concerning claim 13, it is acknowledged that the reference appears to only contemplate using a T-die extrusion method. Nevertheless, claim 13 is a product-by-process claim and there does not appear to be any patentable distinction between the product of claim 13 and that of claim 14. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process" *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

The property limitation of claim 15 is deemed to be necessarily inherent given the strong parallels between the claimed and prior art films.

Claims 1, 8, and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Kohn, U.S. Patent # 4,910,082. Kohn discloses the manufacture of pin-hole free polyphenylene oxide film. Though made by a casting method, it is patentably

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indistinguishable from the films disclosed in claims 13 and 14, particularly since there are no physical limitations, e.g. thickness, whatsoever attached to the claimed film.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamo, JP 2002241601. Magnesium and aluminum hydroxide are mentioned as alternatives to the organophosphorus compounds for imparting a flame retardant characteristic to the prior art film. Further, the skilled artisan will optimize the amount of this component to be added as a matter of routine experimentation.

As for claims 5 and 6, the reference is admittedly silent as to the incorporation of a silane compound. However, the Examiner takes notice of the fact that silanes are employed ubiquitously in the formulation of polymer compositions to which are added inorganic fillers, and especially metal hydroxides, because they behave as compatibilizers/coupling agents thereby improving the dispersability of the filler by modifying its surface. See, for instance, page 4, lines 11-14 of JP 3-126538 where there is taught a resin sheet comprising polyphenylene oxide as the base polymer material to which may be added various inorganic fillers. It is stipulated that a silane

coupling agent is preferably incorporated in those instance wherein an inorganic filler is to be blended into the polymer.

Proper selection of an appropriate coupling agent is also within the capability of one having ordinary skill as that person will appreciate that the silane should have both groups that are reactive with groups contributed by the filler surface, usually alkoxysilyl groups, and another moiety that is reactive with the host matrix. Given that polyester is a required component of the composition and may contain carboxylic acid endgroups, an amino-functional silane is an obvious permutation of the silane coupling agent.

Claims 1-2, 5-6, 8, 13-14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada et al., JP 3-126538. Takada teaches a multilayered sheet comprising a polyphenylene oxide resin layer to which is laminated a release sheet selected from those outlined in page 4, lines 15 and 16. The polyphenylene oxide layer comprises those materials that are mentioned in the first 10 lines of page 4 and may include an inorganic filler in which case the incorporation of a silane coupling agent is also advocated (page 4, lines 11-14).

It is recognized that the Examples summarize compositions for which the polyphenylene oxide weight contribution is less than 50 wt.%. However, the Examiner submits that the broader disclosure renders obvious an embodiment where this limitation is satisfied, particularly where PPO is added in a quantity corresponding to the higher end of the permissible range and the other components are added in amounts consistent with the lower portions of their respective ranges.

Concerning claim 6, as before, this claim limitation is obvious insofar as the skilled artisan will select silane compounds bearing functional groups that are chemically complimentary with a group contributed by either the PPO or the polyester.

Allowable Subject Matter

Claims 7 and 9-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARC S. ZIMMER whose telephone number is (571)272-1096. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jim Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marc S. Zimmer/

Primary Examiner, Art Unit 1796